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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/482,263	01/13/2000	Gunter Halmschlager	P18720	6753

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EXAMINER

HUG, ERIC J

ART UNIT	PAPER NUMBER
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1731

3

DATE MAILED: 12/05/2001

Please find below and/or attached an Office communication concerning this application or proceeding.

Handwritten: 3

Office Action Summary	Application No.	Applicant(s)	
	09/482,263	HALMSCHLAGER ET AL.	
	Examiner	Art Unit	
	Eric Hug	1731	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 January 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-43 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 and 19-42 is/are rejected.
- 7) ☒ Claim(s) 16-18 and 43 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 January 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 5) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 38 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The limitation "guiding a paper web on the belt" is not an appropriate method step in the process of producing a belt.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 5, 7, 13-15, 19-21, 24-26, and 30-38 are rejected under 35 U.S.C. 102(b) as being anticipated by Dutt (US 5,238,537). Dutt discloses a belt for guiding a paper web through an extended nip press. The belt has an interwoven base fabric and an impregnated coating which is impenetrable to oil, water, and air. The base fabric is a woven structure which is sufficiently open to allow total impregnation with polymeric material within the fabric voids. The woven construction must have sufficiently stability to operate under paper machine conditions. The resin is applied to the woven fabric, then cured for a sufficient amount of time. The impregnated

surface of the belt is made smooth through a grinding and polishing operation. The belt reads on the claims as follows:

Claims 1, 5, 13, 24, 25, 26, 36: The fabric base is made of interwoven monofilaments, and provides the support and strength for the press belt. A polymeric (plastic) material fills the voids (interstices) of the fabric.

Claims 2, 38: The belt is designed for guiding a paper web through an extended nip press.

Claim 7: The monofilaments have circular cross-section (see figures).

Claims 14, 15: The filled belt is impervious to oil, water, and air.

Claims 19-21: The surface of the belt comprises the woven structure that provides the strength and support of the press belt (see figures), which is impermeable after filling with polymer.

Claim 30-35: The liquid polymeric coating is applied to the fabric, accomplished by smoothing with a doctor blade (see Example 1). The surface is further smoothed through grinding and polishing.

Claim 37: The base fabric can be a single layer or multi-layer fabric, and be of any construction, hence, the weaving density can be adjusted based on the desired belt characteristics.

Claims 1, 3-6, 13, and 24-29 are rejected under 35 U.S.C. 102(b) as being anticipated by Romanski et al (US 4,015,038). Romanski discloses a temperature resistant fabric used in the conveying of textiles through dryers. The fabric comprises a mixture of woven synthetic and metal fibers, the yarns of the weave being coated with a temperature resistant synthetic resin.

With respect to the claims:

Claims 1, 3-6, 13, 24-27: The fabric base is made from interwoven yarns, which include crossover yarns braided over a core of glass and/or metal wire. The yarns provide the support and strength for the press belt. Example 1 uses bronze wire. A polymeric (plastic) resin coating is applied to encapsulate the yarns without closing the spaces between adjacent yarns, thus the coating only partially encloses the interstices between the yarns.

Claims 28-29: The fabric is coated by conventional means, such as dipping or spraying (column 3, lines 4-13).

Claims 1, 2, 5, 7, 13, 19, 21-26, 28, 31, and 36-38 are rejected under 35 U.S.C. 102(b) as being anticipated by Romanski (US 4,224,372). Romanski discloses a papermachine clothing for use as a dryer felt with controlled internal void volume. An interwoven fabric is made from interwoven yarns, and then a synthetic thermoplastic resin is added to at least partially fill the void spaces within the fabric.

Claims 1, 5, 13, 24, 25, 26, 31, 36: The fabric base is made of interwoven monofilaments, and provides the support and strength for the press belt. A liquid thermoplastic resin partially fills the voids (interstices) of the fabric.

Claims 2, 38: The belt is designed for guiding a paper web.

Claim 7: The yarns have circular cross-section (see figures).

Claims 19, 21: The surface of the belt comprises the woven structure that provides the strength and support of the belt (see figures).

Claims 22, 23: The construction of the fabric is described as a screen (column 1, line 27-38), and is clearly made of flexible, woven materials.

Claim 28: The filling composition may be added to the yarns by dipping (column 5, lines 60-64).

Claim 37: The base fabric can be a single layer or multi-layer fabric, and be of any construction, dictated by the desired permeability of the fabric. Hence, the weaving density can be adjusted based on the desired belt characteristics (see column 1).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3-6, 13, 22-27, 36, 39, 41, and 42 are rejected under 35 U.S.C. 102(b) as being anticipated by, or in the alternative, under 35 U.S.C. 103(a) as obvious over Nopper et al (US 3,968,296). Nopper discloses a thermally conductive pressure compensator for heating plate presses. The compensator is a composite sheet comprising a woven metal wire mesh embedded in a heat conducting elastomeric filler material. The mesh openings are filled with the filler material. The metal mesh serves as the supporting fabric for the heat conductive material, and further as a strength carrier (column 1, lines 48-52). The preferable metal is bronze or brass. Nopper does not address specifically the following elements, although they would be obvious to one skilled in the art:

-- Stainless steel is not specifically disclosed, however stainless steel wire mesh is an obvious choice of metal because of its thermal and corrosion-resistant properties.

-- Scraping of the filler material as one makes the pressure compensator is not specifically disclosed, however one would need to remove excess material to obtain a usable surface.

-- Nopper does not specifically disclose the pressure compensator as being a belt, however the pressure compensator is an obvious variant of the invention, as one would need only to join the two ends of the compensator to form a belt.

Claims 8, 10, and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nopper as described above, and further in view of Kastner (US 1,794,624). Kastner discloses a metallic cloth for a papermaking machine comprising either circular, oval, or rectangular fibers woven with two weft wires (cross-direction wires) per interstice (see Figures 3-5). It would be obvious to one skilled in the art to modify the weave of the thermally conductive material of Nopper to have a two weft weave for greater flexibility. It would also be obvious to use flatter wires with either an oval or rectangular shape to prevent wire markings on the paper or fabric that is in contact with the cloth.

Claims 9 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dutt in view of Keller (US 5,597,646). Dutt discloses the papermaking fabric described above using filaments with a circular cross-section. Keller discloses other yarn constructions (cables) that can be used in paper machine fabrics. The yarn constructions include square and polygonal cross-sectional structures made from combining monofilaments. It would be obvious to construct a papermaking fabric such as one of Dutt with the yarn constructions of Keller to obtain structural and aesthetic properties that cannot be obtained with simple circular monofilaments.

Claims 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dutt in view of Bowen, Jr. (US 5,449,548). Dutt discloses the papermaking fabric described above using filaments with a circular cross-section. Bowen, Jr. discloses flexible filaments with fins and variable cross-section for use in papermakers' fabrics. It would be obvious to construct a papermaking fabric such as one of Dutt with flexible fibers of Bowen, Jr. to help fill the interstitial spaces in the fabrics where it cannot be done with circular fibers.

Allowable Subject Matter

Claims 16-18 and 43 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

The prior art does not disclose or suggest providing a papermakers drying belt from a polymer filled interwoven metallic mesh and having beadlike protuberances located on the peripheral regions. The prior art also does not disclose or suggest making such a belt comprising the steps of filling the metal mesh screen, scraping excess filler, curing, and then grinding to obtain the desired web-contacting surface.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Curzio et al (US 5,212,010) discloses a woven stabilizing fabric for laminates. The fabric can comprise metal fibers such as copper, aluminum, and steel. Polymer resins are used to coat the fibers and act as a matrix for the reinforcing fabric in composite materials.

Patz et al (US 4,486,490) discloses a resin impregnated material comprising aluminum coated glass fibers.

Lindsay (US 340,335) discloses drying belts for a papermaking machine, whereby the belts are made of brass, copper, or bronze.

Williams (US 1,873,949) discloses a paper drying felt (Figure 2) which is obtained by rubberizing a surface of a woven fabric to obtain a smooth surface that is impervious to moisture. The rubberizing is performed on the paper web engaging side, and fills the valleys formed by the woven threads.

Marchand (US 5,651,394) discloses oval-shaped yarns for use in papermaking fabrics.

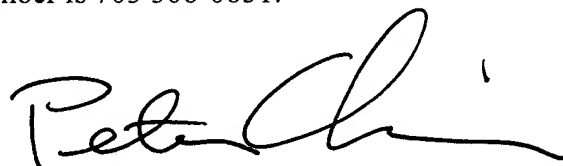
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric Hug whose telephone number is 703 308-1980. The examiner can normally be reached on Monday through Friday, 8:00 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on 703 308-3837. The fax phone numbers for the organization where this application or proceeding is assigned are 703 305-7718 for regular communications and 703 305-3599 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308-0651.



jeh
November 27, 2001



**PETER CHIN
PRIMARY EXAMINER**